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XI. EFFECTS

OF LIGHTNING ON THE HOUSE OF CAPT. DANIEL MERRY, AND SEVERAL OTHER HOUSES IN THE VICINITY, ON THE EVENING OF THE 11th OF MAY, 1805;

In a letter to the Hon. John Davis, Esq. Recording Secretary of the American Academy of Arts and Sciences.

By JOHN LATHROP, D. D. F. A. A.

THE wind had been fresh at the southward and west the greatest part of the day, but the rain was not copious until the evening. Between six and seven o'clock, the clouds were thick and the thunder frequent; but there were no uncommonly heavy discharges, until a little after seven. About a quarter after seven, there were two very heavy claps, the latter but a few seconds after the former. The latter of the two claps now mentioned was so powerful, that many people, at a distance from the place of explosion, felt the shock, and supposed at the instant they were struck.

Some of the effects of this explosion are now to be related.

On the northeast side of the chimney of Capt. Daniel Merry's house, which is in ship street, a little distance from Hancock's wharf, there is a breach, beginning where the chimney appears above the roof, and extending above two feet upwards and almost as wide as the chimney, leaving the top unhurt. The rafter, which comes near the chimney, the plate, and the summer, are shivered to pieces; the boards and shingles of the roof appearing to be burst upwards. The expansion of air in the upper chamber, where the charge appears to have entered, was such as to burst out almost all the glass windows, and several of the sashes were broken. Whether the charge came in, or passed out at the breach now mentioned, is, and must remain problematical; but in narrating the effects I will suppose this breach in the chimney was the place of entrance. Part of the fluid passed down by the chimney to the next chamber, bursting off the wood work from the masonry; and from thence to the store below, and into the cellar, leaving the marks of its passage all the way. In the second chamber the fluid was divided; part of the charge passed down by the chimney to the cellar in the nearest course, and part took a bell wire, which it followed, making two right angles; then passing through another chamber, and down to the front entry, where it burst through the door into the street.

Mr. Murray's house is separated from the next house at the northward by a space, not more than eight or nine inches. In the second story of this house, which is occupied by Mr. Bullard, there is a breach in the wall, nearly opposite to the chimney of Mr. Murray's house, and the wood work, from the breach down to the cellar, is, in many places, very much damaged.

Between the house, occupied by Mr. Bullard, and the next at the northward, there is a passage way of twelve or fourteen feet down a wharf. Capt. Barns, who occupies this house, supposed from the tremendous shock, that the house must have been struck; but on examination no effects of the explosion could be found, except a small hole just under the cornice, over the fire place in the chamber. Over this fire place Capt. Barns had hung a picture of the late President Washington, the frame of which was newly guilt and burnished. A stream of fluid passed from the small hole above mentioned to the upper corner of the picture, which was just under it. Melting the metal, and leaving a dusky appearance on the paper, it went off at the lower corner of the frame, passing through a small hole into the breast work; and coming out again between the wood work and the stone mantle, where it left a black mark on the paint, it passed down to the iron tongs, which were by the side of the fire place.

Capt. Barns' house is joined on the north by a house belonging to Capt. Jonathan Merry. A part of the charge took an oak post on the top of this house, which is shivered and split from top to bottom. No mark however of the fluid is to be found from this post to the lower part of the house. In the kitchen, which is nearly under the post above mentioned, there is a pump, which has an iron handle. Persons, who were in the kitchen at the time, say, there appeared to be a stream of fire from the iron pump handle, which passed out at the door, then open, and across the passage way, down Mr. Parson's wharf, into the lower window of the opposite house. On examining the house, into which the stream of fire appeared to enter, I found several places, where the wood work was shivered by the explosion.

The good hand of providence is to be acknowledged in the wonderful preservation of so many lives, which appear to have been in imminent danger ; several of whom were struck down, or forced to a considerable distance from the place, where they were standing. There were ten persons in the house of Daniel Merry, where the explosion was the most terrible. Mrs. Howard, the daughter of Capt. Merry, was in a chamber, where the whole breast work about the fire place was burst off, and a woman struck down with the force. Mrs. Howard was setting on a bed, and felt an extreme pressure and heat, but received no essential injury. She was on the side of the room, opposite to where the bell wire passed along ; this circumstance was probably much in her favour. She was the same night put to bed with a fine son. Mr. Howard was in the store, and but the moment before moved from his writing desk, which was near the chimney. The fluid passed down just by the spot, where he was standing a moment before ; and had he not moved, the probability is he would have been killed. It is to be observed, the bell wire, which conducted a portion of this charge, so far as it continued, was melted, and a great part of it consumed, leaving a black mark all along the paper, over which it had been fixed. The people all say, the smoke was for some time so thick they could scarcely discover any thing in the house where they were; the smell from consumed, inflammable air, was much like sulphur, and the smoke of gunpowder.

Several persons in the houses which were struck, and others in the neighbouring houses, say they saw something like a ball of fire, which appeared to descend and rise again in an instant. Whether the cloud was *positive* at the time, or the earth, cannot be determined by any of the effects. The boards and shingles of the roof appeared indeed to have been raised up by a force from beneath; but the splinters of the *oak post*, on the top of capt. Jonathan Merry's house, appeared as if the force had entered at the top. I have been inclined to think, very little evidence can be collected from the effects of lightning, to prove which is *positive* and which *negative* at the time of the explosion, the earth or the cloud. On the same trees, and the same buildings, we find splinters, and other effects, some of which look as if the force was from the cloud, and some, as if from the earth.—When two bodies, one *positive* and the other *negative*, approach to the *striking distance*, the explosion may be like that of gunpowder, or the thundering nitre, pressing the air in every direction, and rending those solid bodies, which are not calculated to receive and conduct the dreadful charge. The power of metal, to conduct this fire from the artillery of the skies, is evident in the case before us. A small wire, not thicker than a common brass pin, carried that part of the charge along in safety, which burst the door to pieces, where this conductor ended.

Although the wind was strong from the southward and west all the day before, and all the night, the motion of the thunder was evidently from east to west. The hardest thunder in Boston was about a quarter past seven; at Providence the hardest was about eight; at Newhaven the severity of the storm came on about one in the morning, as appears from the account published soon after. If it be a fact, that the thunder passed from east to west, while the wind in the lower region of the atmosphere was in the opposite direction, it will be natural to inquire for the cause. The following thoughts occurred to me, which are humbly submitted. The wind, which had been many hours strong from the south and west, must have put a large portion of the atmosphere in motion towards the east. The re-action, not only condensed the vapors in the eastern region, forming the clouds, which gave plentiful showers of rain; but the same re-action, which the body of the atmosphere, moving from the west, received from the opposing body of the atmosphere at the east, must necessarily give a different direction to the wind, probably turning the current upwards, where there would be less resistance, and thus, in a higher region, forming a current of air, from east to west. The longer the wind below shall continue to blow from the west, the farther, on the present supposition, must the upper current proceed from the east. While two such currents of air continue, one *below* and the other *above*, carrying with them all the materials for thunder, there will no doubt be frequent explosions from clouds passing at no great distance from each other. When certain tracts of cloud in the upper current are in a *positive* state, the explosion will be to a *negative* state in the lower current. When tracts of cloud in the lower current are positive with respect to the earth, the discharge will be to the earth. When certain tracts of the earth are positive with relation to the clouds above, the discharge will be from the earth to the clouds.

Thus may we contemplate those astonishing displays of the power and wisdom of God, which without doubt are ordained for the general good, while they amaze and terrify us, by their tremendous effects.

Your most obedient servant,

JOHN LATHROP.